

WHAT IS CLAIMED IS:

1. A therapeutic method for treating a bone-associated cancer while reducing the incidence of sustained renal dysfunction comprising:
 - 5 (a) hydrating a human cancer patient;
 - (b) parenterally administering a dose of 650-825 mCi/m² ¹⁶⁶Ho-DOTMP to said patient in an aqueous vehicle comprising an effective antiradiolytic amount of a pharmaceutically acceptable radioprotectant;
 - 10 (c) administering a dose of about 140-200 mg/m² melphalan to the patient; and
 - (d) providing the patient with a stem cell transplant;
wherein the patient is not subjected to total body irradiation in conjunction with the therapeutic method.
- 15 2. The method of claim 1 wherein the patient is refractory to treatment, or in relapse after treatment, with melphalan and/or total body irradiation.
3. The method of claim 1 or 2 wherein the dose is effective to deliver a
20 mean dose of about 15-30 Gy to the bone marrow of said patient.
4. The method of claim 3 wherein about 200 mg/m² melphalan is administered in step (c).
- 25 5. The method of claim 1, 2 or 3 wherein the cancer is multiple myeloma.
6. The method of claim 1, 2 or 3 wherein the cancer is metastatic breast or prostate cancer.
- 30 7. The method of claim 1, 2 or 3 wherein the cancer is Ewing's sarcoma.

8. The method of claim 1, 2 or 3 wherein the radioprotectant is ascorbic acid or gentisic acid.
9. The method of claim 8 wherein the concentration of ascorbic acid is about 35-75 mg/ml.
10. The method of claim 9 wherein the vehicle is buffered to about pH 7-8.
11. A therapeutic method for treating multiple myeloma comprising:
 - (a) hydrating a multiple myeloma patient;
 - (b) parenterally administering a dose of ^{153}Sm -EDTMP effective to deliver about 30-40 Gy of radiation to the bone marrow of said patient;
 - (c) administering a dose of about $140\text{-}200 \text{ mg/m}^2$ of melphalan to said patient; and
 - (d) providing the patient with a stem cell transplant; wherein the patient is not subjected to total body irradiation in conjunction with the therapeutic method.
- 20 12. The method of claim 11 wherein the patient is refractory to treatment, or in relapse after treatment with, melphalan and/or total body irradiation.
13. The method of claim 11 or 12 wherein about 200 mg/m^2 melphalan is delivered in step (c).

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